

SESSIONAL PAPER No. 32

AIR ENGINE FITTERS

AIR BOARD, DECEMBER 14, 1920

EDUCATION AND EXPERIENCE

Time: 1½ hours

Note.—Full, accurate, clear and concise answers are required. Any false statement will result in disqualification in this and future examinations. Write your examination number in the right-hand corner of your answer book.

1. When and where were you born (place, province, country)?
2. Give an account of your education, with dates, studies, schools, etc.
3. What apprenticeship at a mechanical trade have you served? Where, with whom, for how long, when was it completed, and in what sort of shop?
4. Give an account, with dates and time, names of employers, position you held, of your experience in the maintenance and repair of internal combustion engines, particularly aero engines.
5. With what types of aero engines are you thoroughly conversant? How was this experience acquired?
6. If you were in the army, show your experience, if any, in fitting aero engines while on active service in the late war.
7. What other qualifications do you possess which, in your opinion, fit you for the position of Engine Fitter?

PRACTICAL QUESTIONS

Time: 2 hours

1. A new aeroplane has been received without the engine installed. State briefly the operation of installing the engine in the machine. This may be answered with particular reference to the installation of a definite type of engine in a definite type of machine, or just in a general way, showing the steps of installing any engine in any type of machine.
2. Tell how you would check the timing of an engine fitted with a magneto.
3. An engine is misfiring regularly. Suggest the probable causes.
4. A stationary engined aeroplane has just returned from a flight.
 - (a) Tell what work you would do in connection with the engine before you would consider the aeroplane fit for another flight.
 - (b) Supposing there is no Air Rigger available, what would you check over in connection with the rigging before you would consider it fit for another flight?
5. Describe the cycle of operation of a four-stroke gasoline engine.

SESSIONAL PAPER No. 32

AIR FOREMEN MECHANICS

AIR BOARD, DECEMBER 14, 1920

EDUCATION AND EXPERIENCE

Time: 1½ hours

Note.—Full, accurate, clear and concise answers are required.. Any false statement will result in disqualification in this and future examinations.

1. Give your age (date, country and place of birth).
2. Give an account of your education: schools, time at each, and dates; also, of any further study you may have had at Technical or Trade Classes, at Night School, or by Correspondence.
3. Have you served an apprenticeship? If so, in what capacity? Where, when, for how long, and with whom?
4. Give a full account of your experience as a machinist, stating names of shops, dates and time at each, and the class of work done.
5. If not covered by above, give full particulars of your experience in repair shops and hangers, stating if you had charge of a staff of mechanics, and giving the number of men under your supervision.
6. Have you a certificate as an Air Engineer? When, where, and how was this obtained?
7. What knowledge and practical experience have you of the construction and design of aero engines? Give names of the types and makes with which you are acquainted.
8. What military service have you had in the late war? Give dates of enlistment and discharge, and theatres of service. Mention any technical experience which you thus acquired that, in your opinion, fits you for the position of Air Foreman Mechanic.
9. What other qualifications do you possess which, in your opinion, fit you for the position of Air Foreman Mechanic?

PRACTICAL QUESTIONS

Time: 2½ hours

1. Describe briefly the operation of rigging an aeroplane, using, as an example, any particular type of machine, and naming the operations in proper order.
2. Name control surface moved, and state the direction of its movement and its effect on the flying of machine, when the controls in an aeroplane are moved in the following manner:—
 - (a) Control column moved to the right.
 - (b) Control column pushed forward.
 - (c) Left side of rudder bar pushed forward.

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3. A stationary engined aeroplane has just come down from a flight.
 - (a) Describe briefly how you would check over the rigging of the machine before you would consider it fit for another flight.
 - (b) Tell what work you would do in connection with the engine before you would consider the aeroplane fit for another flight.
4. A new aeroplane has been received without the engine installed. State briefly the operation of installing the engine in the machine. This may be answered with particular reference to the installation of a definite type of engine in a definite type of machine, or just in a general way, showing the steps of installing any engine in any type of machine.
5. Tell how you would check the timing of an engine fitted with a magneto.
6. An engine is mis-firing regularly. Suggest the probable causes.

AIR RIGGERS

AIR BOARD, DECEMBER 14, 1920

EDUCATION AND EXPERIENCE

Time: 1½ hours

Note.—Write your examination number in the right-hand corner of your answer book. Full, accurate, clear and concise answers are required. Any false statement will result in disqualification in this and future examinations.

1. Give date, place, and country of your birth.
2. Give an account of your education: schools, time at each, and dates. Have you ever attended technical or trade classes? If so, give full particulars.
3. What apprenticeship have you served? Where, with whom, for how long, for what trade, and in what sort of shop?
4. Show your experience in cabinet-making. Give dates, names of employers, addresses, salary received, position you held.
5. Detail your experience in aircraft construction. Full particulars are required as to erecting, dismantling, repairing, adjusting, and maintaining flying machines or airships.
6. What experience and knowledge have you of aircraft design? Name the types of machine on which you have worked, and the nature of your duties.
7. If you were in the army in the late war, mention dates of your enlistment and discharge, and nature of your duties which, in your opinion, fit you for the position of Air Rigger.
8. What other qualifications do you possess which, in your opinion, fit you for the position of Air Rigger?

PRACTICAL QUESTIONS

Time: 2 hours

1. Describe briefly the operation of rigging an aeroplane, using, as an example, any particular type of machine and naming the operations in proper order.
2. Name control surface moved, and state the direction of its movement and its effect on the flying of machine, when the controls in an aeroplane are moved in the following manner:—
 - (a) Control column moved to the right.
 - (b) Control column pushed forward.
 - (c) Left side of rudder bar pushed forward.
3. A stationary engined aeroplane has just come down from a flight:
 - (a) Describe briefly how you would check over the rigging of the machine before you would consider it fit for another flight.
 - (b) Supposing no Fitter is available to look after the engine of this machine, state briefly what work you would do in connection with the engine before you would consider it fit for another flight.

FABRIC WORKERS

AIR BOARD, DECEMBER 14, 1920

EDUCATION AND EXPERIENCE*Time: 1 hour*

Note.—Write your examination number in the right-hand top corner of your answer book. Full, accurate, clear and concise answers are required. Any false statement will result in disqualification in this and future examinations.

1. When and where were you born (place, province, country)?
2. Give an account of your education, with dates, studies, schools, etc.
3. How, and where, and for how long have you been working cloth? State full particulars of grade and kind of material on which you worked, and the manufacturing establishment in which you were employed.
4. What experience have you as a Fabric Worker in the British Air Force? Give details.
5. What knowledge have you of applying "dope" to fabric of aeroplanes and balloons?
6. In your opinion, what other qualifications do you possess for the position of Fabric Worker?

PRACTICAL QUESTIONS*Time: 2 hours*

1. Describe briefly the operation of covering and doping an aeroplane wing.
2. (a) What are the reasons for the use of dope on fabric parts?
(b) Name the two classes of dope, and state which is the better, giving reasons.
(c) What is used to remove old dope?
3. Describe the conditions that should exist in a Dope Shop.
4. How would you apply a patch?
(a) To a three-cornered tear?
(b) To cover a hole over 3 inches in diameter, where the piece is torn out?

SESSIONAL PAPER No. 32

AIR BOAT BUILDERS

AIR BOARD, DECEMBER 14, 1920

EDUCATION AND EXPERIENCE

Time: 1 hour

Note.—Write your examination number in the right-hand top corner of your answer book. Full, accurate, clear and concise answers are required. Any false statement will result in disqualification in this and future examinations.

1. What is the date, place, and country of your birth?
2. Give an account of the schools you have attended, mentioning studies, grades, dates, and location.
3. To what trade have you served an apprenticeship? For how long, with whom, and where?
4. State fully your training and experience in boat building.
5. Give particulars of your experience in building flying boats.
6. What other qualifications do you possess which, in your opinion, fit you for the position of Air Boat Builder?

PRACTICAL QUESTIONS

Time: 2 hours

1. Describe briefly the various steps in building a flying boat from plans.
2. State the characteristics and qualities of the following types of wood:
(i) Mahogany, (ii) Ash, (ii) Spruce, (iv) Cedar.
3. Define the following terms: (a) Chine, (b) Combing, (c) Garboard Strake, (d) Keelson, (e) Stem, (f) Step, (g) Bulkhead, (h) Stringers, (i) Longerons.
4. If the question of the choice of wood was left to your discretion, which wood would you use in the following places: (a) Engine Bearers, (b) Longerons, (c) Stringers, (d) Keelson, (e) Planking?
5. (a) What is meant by diagonal planking, and where is it used?
(b) What are the advantages and disadvantages of using ply wood?